

## **I. INTERVIEW**

On April 13, 1995, applicants' representatives conducted an interview with Examiners Richter and Peabody. The undersigned wishes to express his sincere gratitude to both Examiners for their cooperation in setting up the interview and in providing applicants an opportunity to discuss very complicated interference issues. Applicants believe the Examiners made extremely insightful comments that helped to significantly focus and clarify the issues. The substance of the interview is therefore reflected in the context of the remarks that follow.

## **II. RESTRICTION REQUIREMENT**

In the outstanding Office Action, the Examiner issued a restriction requirement under 35 U.S.C. § 121, dividing the claims of the present application into the following eight categories defining patentably distinct inventions:

- I. Claims 1-4, 30-53, 79-97, 98-102, drawn to compounds, compositions, and methods of use;
- II. Claims 5, 54, 115-139, drawn to methods of making;
- III. Claims 13 and 62, drawn to methods of making;
- IV. Claims 24 and 73, drawn to methods of making;
- V. Claim 103, drawn to compounds;
- VI. Claims 104-106, drawn to methods of making;
- VII. Claims 107-111, drawn to compounds; and
- VIII. Claims 112-114, drawn to methods of making.

The Examiner also indicated that claims 1, 103, and 107 are generic to a plurality of disclosed patentably distinct species, requiring applicants to elect a single disclosed species for prosecution.

Applicants elect the invention of Group I with traverse as explained below. The claims identified by the Examiner as belonging to Group I have been cancelled and replaced with new

claims 140-142, which clearly fall within Group I as discussed at the interview. Additionally, applicants elect, with traverse, the species of Example 3, page 40, lines 25-28 of the specification.

Applicants request reconsideration of the election of species requirement. As the Examiners are now aware following the interview, applicants believe that Group I contains three separately patentable inventions embodied in claims 140-142, respectively. Given the extraordinary circumstances recognized at the interview to exist in this case, it is believed that the Examiners will agree to withdraw the election of species requirement and to indicate on the record that there will be no further restriction of the compounds of Group I. Otherwise, as discussed, applicants could end up having to file two divisional applications and prosecute the interference against the BMS patent based on three separate patent applications. ✓

With respect to Groups II-VIII, which are subject to the restriction requirement, applicants agree, as discussed, with the Examiner's finding that the claims of these groups define separately patentable inventions from one another and from Group I. But the Office Action indicates that the inventions of Groups II-VI and VIII are classified in the same class (549) and subclass (510). M.P.E.P. § 803 states that if the search and examination of an application can be made without serious burden, the Examiner must examine the entire application even if it includes claims to separately patentable inventions.

At the interview, in response to this argument, the Examiner stated that process claims often involve a literature search that extends far beyond a particular class and subclass of patents. However, it is believed that for the separately patentable inventions of Groups II-IV the literature search would be the same, and no serious burden should result from examining these inventions together. Therefore, reconsideration of the restriction requirement is requested to the extent that Groups II-IV should be examined in a single application. X

Lastly, claims 5, 13, 24, 54, 62, 73 and 103-139, scattered among all the Groups other than Group I, have been properly found to define patentably distinct subject matter from the invention of Group I. The proposed counts for the interference, all of which relate to Group I subject matter, will be discussed below. In this regard, applicants expressly request that the Examiner, in preparing Form PTO-850 in accord with M.P.E.P. § 2309.02, designate all of claims 5, 13, 24, 54, 62, 73 and 103-139 as not corresponding to any of the proposed counts. ✓

### **III. APPLICANTS WITHDRAW THE PRIOR RULE 607 REQUEST**

Although the Examiner has not yet conducted a substantive examination of the claims, much activity has already taken place. Prior to receiving the outstanding Office Action, applicants had filed, inter alia, a series of preliminary amendments, a Declaration of Dr. François Lavelle, and a previous request under 37 C.F.R. § 1.607 to institute an interference with the BMS patent. The Examiner has not acted on any of these papers, other than to issue the outstanding restriction requirement.

Since the Examiner issued the current Office Action, however, applicants have, as discussed at the interview, retained new counsel. Having had an opportunity to study this application and the BMS patent in detail, present counsel submits this Request under § 1.607<sup>2</sup> to provoke an interference with the BMS patent and withdraws the previous Request in its entirety. Applicants also withdraw reliance on the previously filed declaration of Dr. Lavelle and

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<sup>2</sup> Because the Amendment and Response are being filed on April 20, 1995, pursuant to a commitment made at the interview, the "old" interference rules still govern the request, as well as the lack of applicability of Rule 608, which point will be addressed below.

The new rules come into effect on Friday, April 21, 1995. Therefore, all subsequent reference to other interference rules that will govern the institution of this interference (an event that surely will occur after April 20, 1995), will be to the rules effective as of April 21, 1995. The new rules are found in Federal Register, Vol. 60, No. 52, Friday, March 17, 1995, beginning at page 14488.

on a paper entitled "Communication" that was filed on December 29, 1994, along with Dr. Lavelle's declaration.

**IV. AN INTERFERENCE BETWEEN THE PRESENT APPLICATION AND THE BMS PATENT IS APPROPRIATE**

An interference is appropriate between an application and an unexpired patent of different parties when the application and the patent contain claims to the same patentable invention(s). 37 C.F.R. § 1.601(i). 37 C.F.R. § 1.601(n) provides the test for determining whether two parties claim the same patentable invention:

Invention "A" is the "same patentable invention" as invention "B" when invention "A" is the same as [35 U.S.C. § 102] or obvious [35 U.S.C. § 103] in view of invention "B" assuming invention "B" is prior art with respect to "A".

In the sections that follow, not only will applicants show that their claims are patentable and interfere with the claims of the BMS patent, but they will also show that the parties (i.e., RPR<sup>3</sup> and BMS) each claim three patentably distinct inventions. Accordingly, applicants will propose setting up the interference with three separately patentable counts. 37 C.F.R. § 1.601(f).

**A. The Parties Claim The Same Three Patentably Distinct Inventions**

The three separately patentable inventions claimed in both the present application and the BMS patent include a genus of final products (hereafter the "genus" count), a species of final product (hereafter the "species" count), and a genus of intermediate compounds (hereafter the "intermediate" count).

As a threshold matter in setting up the interview, Examiner Richter requested a demonstration that the RPR claims are drawn to allowable subject matter. The allowability of RPR claims 140-142 was demonstrated at the interview and will now be discussed, along with

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<sup>3</sup> Applicants' application is assigned to Rhône-Poulenc Rorer S.A., hence the abbreviation "RPR." For consistency purposes, when addressing the real parties in interest, this paper will endeavor to refer to either RPR or BMS.

a showing of how the claims interfere with the BMS claims. Additionally, counts of the interference will be proposed.

**1. RPR claim 140 is allowable and  
interfering with claim 1 of the BMS patent**

RPR claim 140 and claim 1 of the BMS patent define the same generic patentable invention. RPR claim 140, as Exhibit A shows, falls within the scope of cancelled claim 98. Claim 140 has complete support in the present RPR specification, as shown in Table 1:

Table 1

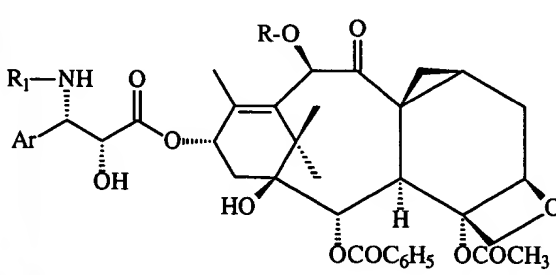
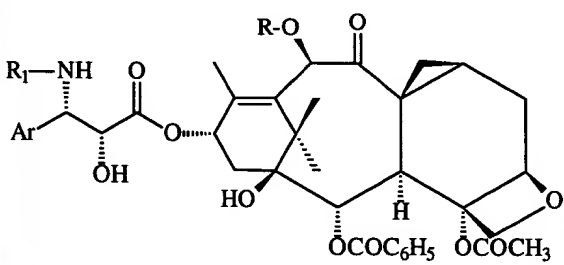
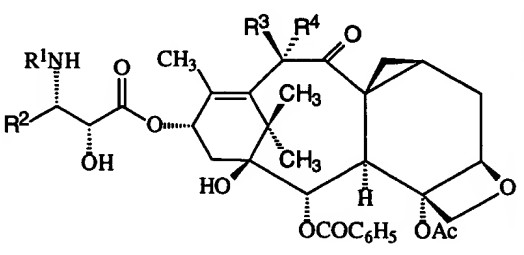
<p>140. A taxoid of the formula:</p> 	<p>Support in applicants' specification:</p> <p>Page 1, lines 1-5.</p>
<p>R represents hydrogen or acetyl,</p>	<p>Page 1, line 9.</p>
<p>R<sub>1</sub> represents benzoyl or R<sub>2</sub>-O-CO- in which R<sub>2</sub> represents t-butyl, and</p>	<p>Page 1, lines 11-14 and Page 40, lines 25-28 ("3-tertbutoxycarbonyl").</p>
<p>Ar represents phenyl or α- or β-naphthyl, said phenyl or naphthyl being unsubstituted or substituted by C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, halogen, or CF<sub>3</sub>, or</p> <p>Ar represents 2- or 3-thienyl or 2- or 3-furyl, said thienyl or furyl being unsubstituted or substituted by halogen.</p>	<p>Page 2, lines 24-28 and Page 3, lines 5-9.</p> <p>Page 4, lines 7-10.</p>

Table 2 provides a succinct comparison of the structures recited in RPR claim 140 and BMS claim 1, while also offering a simple correlation between applicants' "R" groups and those

used in the BMS patent. This Table demonstrates two important points: (1) RPR claim 140 recites the same invention as BMS claim 1 and thus interferes with that patent claim, and (2) RPR claim 140 defines patentable subject matter.

Table 2

<p>RPR claim 140</p> 	<p>Claim 1 of the BMS patent</p> 
<p>R: H or acetyl</p>	<p>R<sup>4</sup>: H</p> <p>R<sup>3</sup>: OCOR, -OCOOR, H, or OH, or R<sup>3</sup> and R<sup>4</sup> jointly form a carbonyl</p> <p>R: C<sub>1-6</sub> alkyl</p>
<p>R<sub>1</sub>: benzoyl, or R<sub>2</sub>-O-CO-</p> <p>R<sub>2</sub>: t-butyl</p>	<p>R<sub>1</sub>: -COR<sup>2</sup></p> <p>R<sup>2</sup>: t-butyloxy, C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>3-6</sub> cycloalkyl, or phenyl, optionally substituted by C<sub>1-4</sub> alkyl, C<sub>1-6</sub> alkoxy, halogen, or -CF<sub>3</sub></p>
<p>Ar: phenyl or α- or β-naphthyl, being unsubstituted or substituted by C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, halogen, or CF<sub>3</sub>; or 2- or 3-thienyl or 2- or 3-furyl, being unsubstituted or substituted by halogen</p>	<p>R<sup>2</sup>: C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>3-6</sub> cycloalkyl, or -W-R<sup>x</sup></p> <p>W: a chemical bond, C<sub>2-6</sub> alkenediyl, or -(CH<sub>2</sub>)<sub>t</sub> (t=1-6)</p> <p>R<sub>2</sub>: naphthyl, furyl, thienyl, or phenyl, optionally substituted by C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, halogen, or -CF<sub>3</sub></p>

Specifically, RPR claim 140 is completely subsumed within the scope of genus claim 1 of the BMS patent and is directed to the same invention. Moreover, since the PTO has already issued BMS claim 1, RPR claim 140, falling entirely within the scope of the allowed patent claim, must define allowable subject matter. Thus, genus claim 1 of the BMS patent and RPR claim 140 embrace the same patentable invention and an interference is appropriate for the genus.

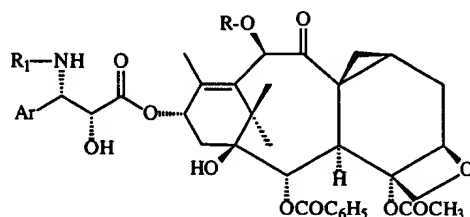
In proposing counts for this interference, applicants have followed the widely-used convention of linking the two broadest corresponding claims from the present application and BMS patent by "OR." The parties' claims are not written in exactly the same manner and recite different "R" group designations. As discussed at the interview, this proposal appears fair to both RPR and BMS and should make references to the respective specifications much simpler for purposes of, for example, showing support since neither party will be forced to transpose its variables.

Moreover, the proposed counts satisfy the requirement of 37 C.F.R. § 1.606 that at the time an interference is initially declared a count shall not be narrower in scope than any application claim that is patentable over the prior art and designated to correspond to the count or any patent claim which corresponds to the count.

Proposed generic count and claims designated as corresponding thereto

Count 1

A taxoid of the formula:



in which

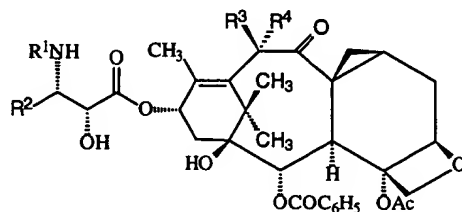
R represents hydrogen or acetyl,

R<sub>1</sub> represents benzoyl or R<sub>2</sub>-O-CO- in which R<sub>2</sub> represents t-butyl, and

Ar represents phenyl or α- or β-naphthyl, said phenyl or naphthyl being unsubstituted or substituted by C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, halogen, or CF<sub>3</sub>, or Ar represents 2- or 3-thienyl or 2- or 3-furyl, said thienyl or furyl being unsubstituted or substituted by halogen,

OR

A compound of the formula



in which

R<sup>1</sup> is -COR<sup>2</sup> in which R<sup>2</sup> is t-butyloxy, C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>3-6</sub> cycloalkyl, or phenyl, optionally substituted with one to three same or different C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, halogen or -CF<sub>3</sub> groups;

R<sup>2</sup> is C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>3-6</sub> cycloalkyl, or a radical of the formula -W-R<sup>x</sup> in which W is a bond, C<sub>2-6</sub> alkenediyl, or -(CH<sub>2</sub>)<sub>t</sub>-, in which t is one to six; and R<sup>x</sup> is naphthyl, furyl, thienyl or phenyl, and furthermore R<sup>x</sup> can be optionally substituted with one to three same or different C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, halogen or -CF<sub>3</sub> groups; and

R<sup>3</sup> is OCOR, -OCOOR, H, or OH; R<sup>4</sup> is hydrogen; or R<sup>3</sup> and R<sup>4</sup> jointly form a carbonyl group; and R is C<sub>1-6</sub> alkyl.



The generic count includes RPR claim 140 and BMS claim 1 in the alternative. As discussed at the interview, RPR claim 140 and BMS claims 1-6, 8 (to the extent it depends on claims 1-6), and 9 (to the extent it depends from claims 1-6) should be designated in Form PTO-850 as corresponding to generic Count 1. Multiply dependent claims 8 and 9 also depend on claim 7, which defines a species compound separately patentable from the genus. In view of the multiple dependencies of BMS claims 8 and 9, applicants have identified herein the dependencies of claims 8 and 9 that should correspond to the generic Count 1.

**2. RPR claim 142 is patentable and interfering with BMS patent claim 7**

RPR claim 142 and claim 7 of the BMS patent cover the same compound, although each claim names it differently. RPR claim 142 recites the subject matter of cancelled claim 102, and, as Exhibit B shows, falls within the scope of the cancelled claim. The RPR specification supports claim 142 at Example 3, page 40, lines 25-29.

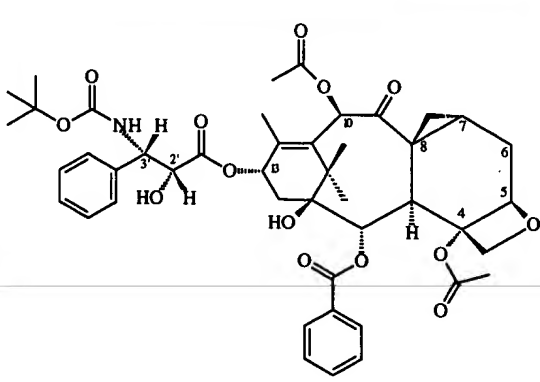
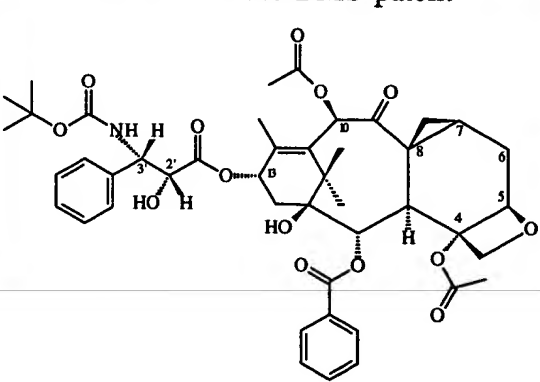
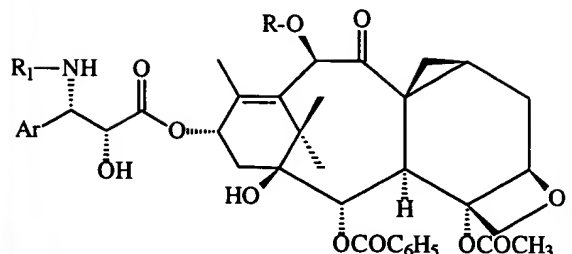
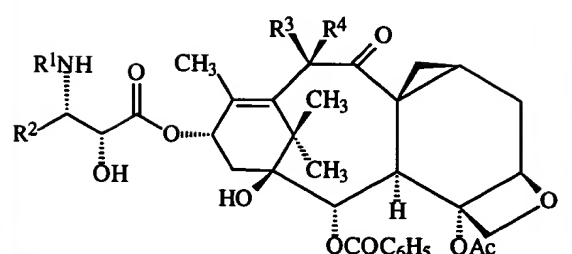
RPR claim 142 recites 4 $\alpha$ -10 $\beta$ -diacetoxy-2 $\alpha$ -benzoyloxy-5 $\beta$ ,20-epoxy-1 $\beta$ -hydroxy-7 $\beta$ ,8 $\beta$ -methylene-9-oxo-19-nor-11-taxen-13 $\alpha$ -yl(2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenyl propionate, whereas BMS claim 7 recites N-debenzoyl-N-t-butoxycarbonyl-7-deoxy-8-desmethyl-7,8-cyclopropataxol. These chemical names are synonyms for the same compound as shown in ¶ 4 of the Declaration of Dr. François Lavelle, submitted herewith as Exhibit C and discussed in detail below.<sup>4</sup>

Table 3 shows how the compound recited in RPR claim 142 and BMS claim 7 is a species falling within both RPR genus claim 140 and BMS patent genus claim 1:

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<sup>4</sup> After the interview on April 13, 1995, the undersigned returned to Europe on April 14, 1995 and contacted Dr. Lavelle. Because Dr. Lavelle was due to begin annual leave that very afternoon, the declaration was sent to him by facsimile, and he reviewed and executed the paper sent to him by facsimile. It is realized that the formulae of Compounds I, II, and III at pages 2-3 of the declaration are hard to read; for the Examiners' convenience an unexecuted version (with no Appendices) that is more readable is submitted as Exhibit D. Dr. Lavelle will return from annual leave on April 24. He will be asked to reexecute a more readable form of the declaration and that will be delivered by hand to the Examiners as soon as possible.

Table 3

<p>RPR claim 142</p> 	<p>Claim 7 of the BMS patent</p> 
<p><u>Name</u> 4α-10β-diacetoxy-2α-benzoyloxy-5β,20-epoxy-1β-hydroxy-7β,8β-methylene-9-oxo-19-nor-11-taxen-13α-yl (2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenylpropionate.</p>	<p><u>Name</u> N-debenzoyl-N-t-butoxycarbonyl-7-deoxy-8-desmethyl-7,8-cycloproptaxol</p>
<p>RPR genus claim 140</p> 	<p>BMS genus claim 1</p> 
<p>R: acetyl</p>	<p>R<sup>4</sup>: H R<sup>3</sup>: OCOR R: C<sub>1</sub> alkyl</p>
<p>R<sub>1</sub>: R<sub>2</sub>-O-CO- R<sub>2</sub>: t-butyl</p>	<p>R<sub>1</sub>: -COR<sup>z</sup> R<sup>z</sup>: t-butyloxy</p>
<p>Ar: phenyl</p>	<p>R<sup>2</sup>: -W-R<sup>x</sup> W: a chemical bond R<sub>2</sub>: phenyl</p>

237

In sum, RPR claim 142 and BMS claim 7 define the same compound and thus define the same invention. The PTO has already issued BMS patent claim 7; RPR claim 142 must, therefore, be allowable. Species Count 2 links RPR claim 142 and BMS claim 7 by "OR" as follows:

**Proposed species count and claims designated as corresponding thereto**

**Count 2**

4 $\alpha$ -10 $\beta$ -diacetoxy-2 $\alpha$ -benzoyloxy-5 $\beta$ ,20-epoxy-1 $\beta$ -hydroxy-7 $\beta$ ,8 $\beta$ -methylene-9-oxo-19-nor-11-taxen-13 $\alpha$ -yl(2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenylpropionate

OR

N-debenzoyl-N-t-butoxycarbonyl-7-deoxy-8-desmethyl-7,8-cyclopropataxol.

RPR claim 142 and BMS claims 7, 8 (to extent it depends on claim 7), and 9 (to the extent it depends from claim 7) should be designated in Form PTO-850 as corresponding to species Count 2.

**3. RPR claim 141 is patentable and interfering with BMS claim 10**

Claim 141 of the present application and claims 10 and 11 of the BMS patent define the same patentable invention directed to intermediate compounds. Claim 141 was rewritten from cancelled claim 101, and, as Exhibit E shows, claims the same subject matter as the cancelled claim. The RPR specification, moreover, fully supports claim 141, as shown in Table 4:

Table 4

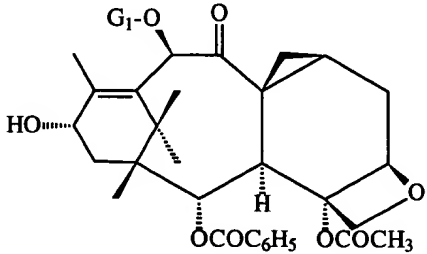
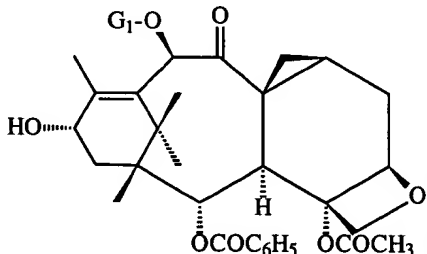
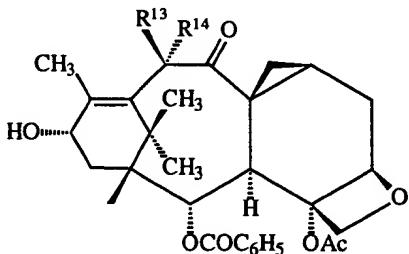
<p>141. A taxoid of the formula:</p> 	<p>Support in applicants' specification:</p> <p>Page 10, after line 6 (formula VI).</p>
<p>G<sub>1</sub> represents hydrogen or acetyl.</p>	<p>Page 10, line 7 ("in which G<sub>1</sub> is defined as above"), referring to page 5, line 18; original claim 30.</p>

Table 5, providing a comparison of the structural formulae recited in RPR claim 141 and BMS claim 10, demonstrates that these RPR and BMS claims recite the same patentable invention:

Table 5

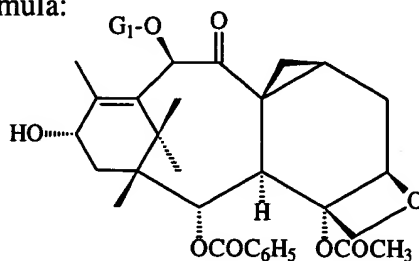
<p>RPR claim 141</p> 	<p>Claim 10 of the BMS patent</p> 
<p>G<sub>1</sub>: H or acetyl</p>	<p>R<sup>13</sup>: H, acetyloxy, or hydroxy</p> <p>R<sup>14</sup>: H or R<sup>13</sup> and R<sup>14</sup> jointly form carbonyl</p>

Specifically, RPR claim 141 falls completely within the scope of Claim 10 of the BMS patent and defines the same invention. Because BMS patent claim 10 has issued, narrower RPR claim 141 must be allowable. Intermediate Count 3 links RPR claim 141 with BMS claim 10 as follows:

**Proposed intermediate count and claims designated as corresponding thereto**

**Count 3**

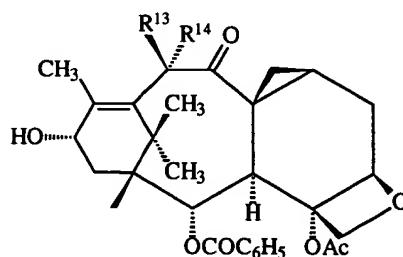
A taxoid of the formula:



in which  $G_1$  represents hydrogen or acetyl,

OR

A compound of the formula:



in which  $R^{13}$  is hydrogen, acetyloxy or hydroxy;  $R^{14}$  is hydrogen; or  $R^{13}$  and  $R^{14}$  jointly form a carbonyl group.

RPR claim 141 and claims 10 and 11 from the BMS patent should be designated in Form PTO-850 as corresponding to intermediate Count 3.

**B. Each Count Defines A Separately Patentable Invention**

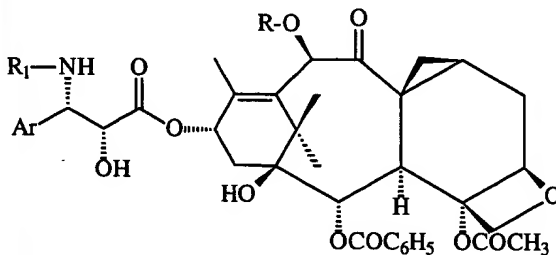
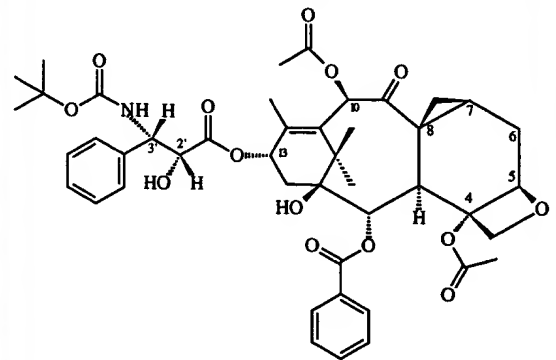
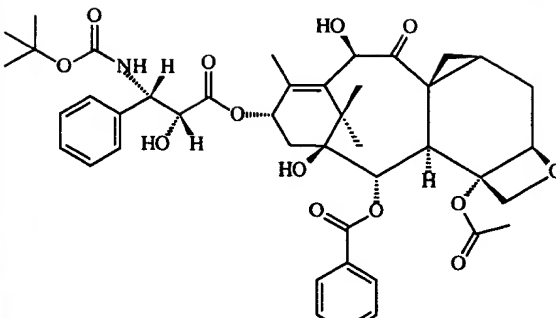
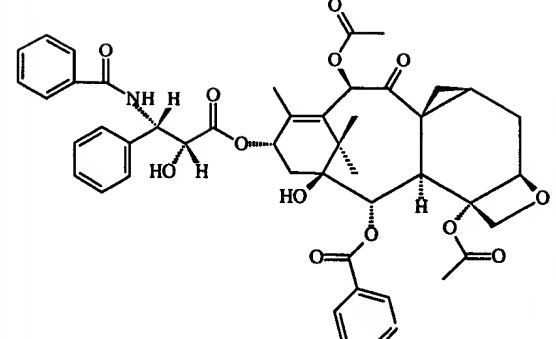
37 C.F.R. § 1.601(f) requires that when there is more than one count, each count shall define a separate patentable invention. Applicants will proceed now to demonstrate that each of Counts 1-3 satisfies this separate patentability requirement.

**1. The species count is patentably distinct from the genus count**

To establish the separate patentability of the species count over the genus count, applicants rely on the data reported in Dr. Lavelle's Declaration comparing the anti-tumor properties of Compound I (i.e., the compound of the species count) against the two structurally closest 7,8 cyclopropyl taxoid compounds, Compounds II and III, exemplified in applicants' specification and/or in the BMS patent. Lavelle Decl., ¶¶ 2b, and 3-6.

Table 6 illustrates the structural relationships of Compounds I, II, and III and also shows that each compound falls within RPR claim 140 and thus within the genus count.

Table 6

<p>Generic formula RPR claim 140</p>  <p>R: H or acetyl  R<sub>1</sub>: benzoyl or tert-butoxycarbonyl  Ar: phenyl</p>	<p>Compound I</p> 
<p>Compound II</p> 	<p>Compound III</p> 

As is apparent from these structural formulae, Compound II differs from Compound I only in that it has an hydroxy group instead of an acetoxy group at position 10. Lavelle Decl., ¶ 7. The sole difference between Compound I and Compound III resides in their 3' position side-chains: Compound III has a phenyl group instead of a t-butoxy group. *Id.*

Dr. Lavelle evaluated the *in vitro* and *in vivo* anti-tumor properties of Compounds I, II, and III. The *in vitro* tests compared the multi-drug resistance properties of the compounds. In

the treatment of some cancers, such as colon cancer, the multidrug resistance properties of a drug are highly significant. Lavelle Decl. ¶ 8b.

Specifically, using an art-accepted in vitro test (Lavelle Decl. ¶ 8c), Dr. Lavelle measured the "Resistance Factor R." The lower the Resistance Factor R, the higher the activity of a compound to effectively inhibit tumor cell growth of multi-drug resistant cell lines. Lavelle Decl. ¶ 8g.

Table A from the Lavelle Declaration summarizes the results obtained from these in vitro tests.

TABLE A

Compound	IC <sub>50</sub> (µg/ml) P388	IC <sub>50</sub> (µg/ml) P388/DOX	Resistance Factor R
I	0.03	0.25	8
II	0.03	0.45	15
III	0.085	1.80	21

The multi-drug resistance properties of Compound I were, significantly, about 2-3 times better than the structurally similar Compounds II and III. Lavelle Decl., ¶ 9a.

The in vivo tests evaluated the relative anti-tumor activity of Compounds I, II, and III in treating B16 melanoma-bearing mice. Lavelle Decl., ¶¶ 8i-ad, pp. 5-8. Measurements were made of the compounds' tumor growth inhibition (T/C%) and tumor cell kill (quantified as log cell kill), as indicated at ¶¶ 8t-8u and 8z of the Declaration. As between T/C values and log cell kill, however, log cell kill more closely relates to tumor regulation. Lavelle Decl., ¶ 8ad.

According to standards developed by the National Cancer Institute (NCI), a T/C < 42% represents the minimal level to declare activity. Lavelle Decl., ¶ 8v. By contrast, a T/C < 10%



indicates a level of anti-tumor activity that would justify, based on NCI standards, further development. Id.

Log cell kill values are evaluated by converting them to an arbitrary activity rating system. Lavelle Decl., ¶ 8aa. In the table at ¶ 8aa of his Declaration, Dr. Lavelle summarizes this art-recognized rating system.

The results of the in vivo tests, reported in Table B of the Lavelle Declaration, appear as follows:

TABLE B

Compound	T/C x 100	Score	Log cell kill	Score
I	6	++	2.7	+++
I	16	+	2.0	+++
II	17	+	1.0	+
III	53	-	not relevant	not relevant

As these results show, Compound I, having a log cell kill rating of +++, was superior to Compound II, having a rating of +. Lavelle Decl. ¶¶ 8ab and 9b.

At the interview, the Examiners raised the question of whether the difference of 0.7 in log cell kill shown for the two different experiments utilizing Compound I would cause Dr. Lavelle to doubt the accuracy of the score reported for Compound II. Even though the raw scores differed by 0.7, the important point is that both values for Compound I correspond to an arbitrary activity rating score of +++. Lavelle Decl., ¶ 9b.

Further, Dr. Lavelle has had the occasion to do many in vivo tests of the same type described in his declaration for Compounds I and II on the known TAXOTERE® antitumor compound, which is, like Compounds I, II, and III, also a member of the taxoid family. In these tests, even though the log cell kill values of TAXOTERE® antitumor compound may have

differed in numerical value, the arbitrary activity rating score has always been +++ to the best of Dr. Lavelle's recollection. Id. Thus, Dr. Lavelle has no reason to believe that if he repeated the in vivo test for Compound II, he would obtain a different arbitrary activity rating score. Id.

Compound III was inactive by NCI standards. Lavelle Decl., ¶¶ 8v and 8ad. In contrast, Compound I was active. The difference between activity and no activity is significant. Lavelle Decl., ¶ 9c.

Based on the results of both the in vitro and in vivo tests, Dr. Lavelle concluded that Compound I is unexpectedly superior to the structurally similar Compounds II and III. Lavelle Decl., ¶¶ 9 and 9d. As discussed at the interview, the showing of unexpectedly superior results for the species of Compound I (claimed in RPR claim 142 and BMS claim 7) over the structurally closest compounds of the genus exemplified in the application and/or the BMS patent is a showing that species Count 2 is separately patentable over genus Count 1.

Analogous to a showing of separate patentability under Rule 637(c)(4)(ii), applicants assume, arguendo, that it is relevant to show that the species Count 2 is separately patentable over every RPR and BMS claim asserted above to correspond to genus count 1. Accordingly, applicants make the following showing.

Claim 1 of the BMS patent and RPR claim 140 represent the generic invention. The results in the Lavelle Declaration comparing the anti-tumor properties of Compound I to Compounds II and III, which all fall within the generic formula of both claim 1 of the BMS patent and RPR claim 140, clearly support the separate patentability of the species count over BMS claim 1 and RPR claim 140.

Similarly, Dr. Lavelle's showing demonstrates the separate patentability of species Count 2 over BMS patent claims 2-6 and 8-9.<sup>5</sup> Referring to the generic structural formula given in Table 2 (see page 8 supra) for the claims of the BMS patent, claim 2 of the patent is a subgenus wherein R<sup>1</sup> is benzoyl and R<sup>2</sup> is phenyl. Compound I differs in that R<sup>1</sup> represents t-butyloxy. Therefore, the showing in the Lavelle Declaration of Compound I (R<sup>1</sup> is t-butyloxy) over Compound III (R<sup>1</sup> is benzoyl) supports the separate patentability of the species count over claim 2.

Claim 3 of the BMS patent, depending from claim 2, represents a specific compound where R<sup>3</sup> and R<sup>4</sup> form a carbonyl group. Dr. Lavelle did not test this specific compound. But Compound III is closer in structure to Compound I than is the compound of claim 3. Thus, the showing of Compound I over Compound III supports the separate patentability of the species count over claim 3.

Claim 4 of the BMS patent, which also depends from claim 2, defines R<sup>3</sup> as acetyloxy and R<sup>4</sup> as hydrogen and actually represents Compound III. Thus, the Lavelle Declaration demonstrates the separate patentability of the species count over claim 4 based on a comparison of results for Compounds I and III.

Claim 5 of the BMS patent depends from claim 2 and defines a specific compound where R<sup>3</sup> is hydroxy and R<sup>4</sup> is hydrogen. The compound of claim 5 is more structurally remote from Compound I than is Compound III. Thus, the showing of Compound I over Compound III demonstrates the separate patentability of the species count over claim 5.

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<sup>5</sup> Claim 10 and 11 of the BMS patent and RPR claim 141 relate to the intermediate. The showing of separate patentability of both the species and genus counts over the intermediate count will be demonstrated below.

Claim 6 of the BMS patent recites a subgenus in which R<sup>1</sup> represents t-butoxycarbonyl and R<sup>2</sup> denotes phenyl. Compound II falls within this subgeneric claim. The showing of Compound I over Compound II (these compounds differ only at the 10-position, both having t-butoxycarbonyl at R<sup>1</sup>) thus establishes the separate patentability of the species count over claim 6.

Claims 8 and 9 of the BMS patent can be treated together. These claims relate to pharmaceutical formulations containing any of the compounds of claims 1-6<sup>6</sup> and to a method of treating mammalian tumors comprising the step of administering to a mammal a tumor sensitive amount of any of the compounds of claims 1-6.

All of the compounds tested by Dr. Lavelle were formulated and administered to mammals to treat tumors. Lavelle Decl., ¶¶ 3 and 8i. Thus, the Lavelle Declaration's showing of superiority for the formulations containing Compound I in treating mammalian tumors compared to formulations containing Compounds II and III clearly establishes that the species count is patentably distinct from claims 8 and 9.

Table 7 summarizes applicants' showing of separate patentability of the species compound of RPR claim 142 over RPR claim 140 and all the BMS claims corresponding to the generic invention:

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<sup>6</sup> As discussed previously, BMS claims 8 and 9 also depend from BMS claim 7, which defines the compound of the species count. Therefore, BMS claim 7 is logically excluded from this showing of separate patentability of the species count over the BMS claims corresponding to the genus count.

Table 7

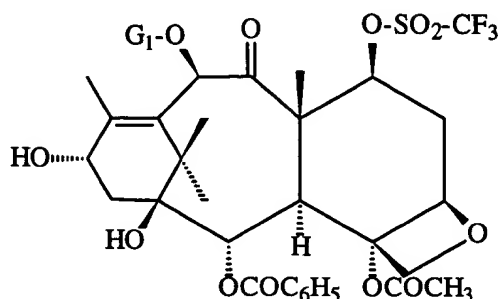
<u>Claim</u>	<u>Showing</u>
BMS1	I vs. II and III
BMS2	I vs. III
BMS3	I vs. III was closer
BMS4	this is compound III and therefore: I vs. III
BMS5	I vs. III was closer
BMS6	I vs. II
BMS8	formulation I vs. formulations II and III
BMS9	<i>in vivo + in vitro</i> I vs. <i>in vivo + in vitro</i> II and III
RPR 140	I vs. II and III

In summary, the Lavelle Declaration demonstrates that the species count defines a separately patentable invention over the genus count.

**2. The Intermediate Count Is Separately Patentable  
From Both The Genus And Species Counts**

Additionally, the intermediate count is separately patentable from both the genus and species counts. Indeed, the record in the present application demonstrates patentable distinctiveness. In issuing the current restriction requirement, the Examiner considered at least one type of intermediate compound patentably distinct from the final products. Applicants specifically refer to claim 103, categorized in Group V, which covers an intermediate compound

representing the precursor to the intermediate of claim 141 (see page 18, line 20 to page 19, line 5 of the present specification). The structural formula of claim 103 appears as follows:



In correctly finding that the intermediate of claim 103 defines a patentably distinct invention from the compounds of either Group I or VII, the Examiner reasoned the intermediates are composed of chemically diverse functionalities that do not have any disclosed relationship. Additionally, he indicated that the intermediates would be expected to have different physical properties, pharmacological activity and thus materially different utilities, making them capable of separate manufacture, use, and sale. Office Action, dated January 23, 1995, p. 3. The Examiner's reasoning of separate patentability for the intermediate of claim 103 applies with equal force to the intermediates of RPR claim 141.

The final product of genus Count 1 and species Count 2 can, moreover, be made using intermediates other than the intermediates of RPR claim 141. Exhibit F describes two reaction schemes.<sup>7</sup> The first scheme, entitled "First Access To Final Compounds," shows that the generic compound of RPR claim 140 or the species of claim 142 can be made using intermediates (represented by formulas XXIV, XXIII, II, III, and IV) other than the intermediates of claim 141. The second scheme, entitled "Second Access To The Final Products," utilizes the intermediates (VI) of claim 141 to make the generic and species compounds.

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<sup>7</sup> Page numbers in Exhibit F refer to page numbers of the certified English translation of the RPR French Priority Application No. 92 14813, already of record.

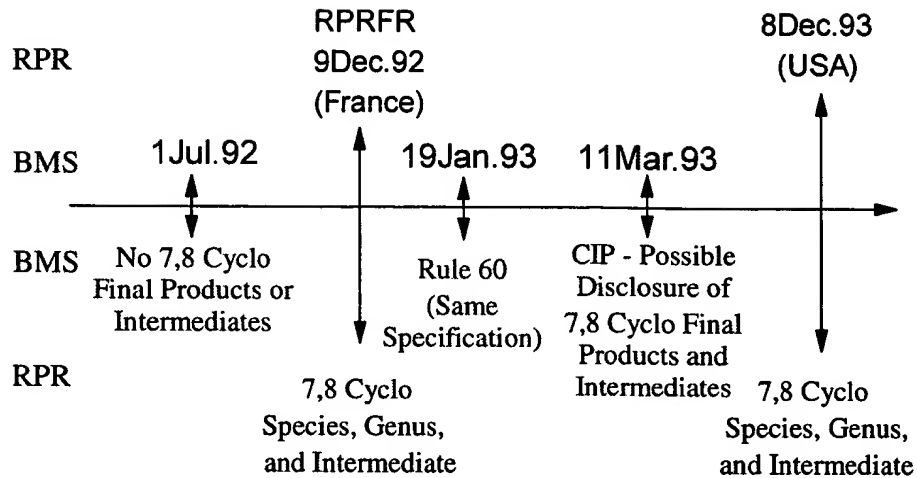
M.P.E.P. § 806.04(b) provides that patentable distinctiveness can be proven if the intermediate can be used to make different final products. Although not exactly the same situation as that identified in M.P.E.P. § 806.04(b), applicants nonetheless submit that the converse is true: patentable distinctiveness is proven if the final products can be made by different intermediates. According to the undersigned's recollection, the Examiners agreed at the interview with this showing of separate patentability for the intermediate count.

For these reasons, the intermediate compounds define an invention that is nonobvious and patentably distinct from the genus and species counts and all claims designated as corresponding respectively to the genus and species counts. Applicants have thus proven that the genus, species, and intermediate compounds are all patentably distinct from one another. Since each of these distinct inventions is claimed in both the BMS patent and the present application, an interference with the three counts set forth above is appropriate. 37 C.F.R. § 1.601(f).

**C. The Relevant Dates**

Applicants will now show that, with respect to each of proposed Counts 1-3, they should be designated as the senior party. Toward to this end, applicants will prove that, for each count, they are entitled to the benefit of the December 9, 1992 filing date of their French Priority Application No. 92 14813 ("RPRFR"), whereas BMS is entitled to an effective filing date for all counts not possibly earlier than March 11, 1993, i.e., the filing date of BMS' CIP Application Serial No. 08/029,819. The following timeline summarizes the RPR and BMS filings relevant to proposed Counts 1-3:

### Timeline 1



#### **1. RPR effective filing date for genus Count 1: 9 December 92**

To be accorded benefit of the December 9, 1992 filing date for generic Count 1, applicants need only show a constructive reduction to practice for a single species within the scope of the count. Mori v. Costain, 214 U.S.P.Q. 295, 297 (Bd.Pat.Int. 1981).

At the interview, the Examiners questioned whether it is possible to show a constructive reduction to practice in a foreign priority application to establish date benefit for interference purposes. As indicated at the interview and confirmed in the case of DeNora v. Ives, 209 U.S.P.Q. 1121 (Bd.Pat.Int. 1980), the answer to this question is yes.

Referring to page 1124, the issues in the DeNora case included whether one party could receive date benefit (constructive reduction to practice) of an Italian application and whether the other party could receive date benefit of a British provisional application. At page 1127, the Board, in looking to see if DeNora should receive date benefit of the Italian application, held that all that is required is a constructive reduction to practice in the Italian application of a species within the genus.

This holding in the DeNora case, therefore, establishes that a constructive reduction to practice in a foreign priority application is possible, and if shown, establishes date benefit for



interference purposes. See also the discussion in DeNora at pages 1127-28, wherein the Board found that Ives was entitled to date benefit for some of the counts based on the disclosure in the British provisional application.

Additionally, the Board in Mori v. Costain, supra, held that to constitute a constructive reduction to practice, Costain's British application need only disclose one species within the subject matter at issue. 214 U.S.P.Q. at 297. Lastly, as discussed at the interview, the Court of Customs and Patent Appeals in In re Hilmer, 424 F.2d 1108, 1113 (C.C.P.A. 1970) found that offensive use of a foreign patent application in an interference is an exception to the general rule that the foreign patent application does not defeat the patent rights of another.

For purposes of establishing constructive reduction to practice of genus Count 1 in RPRFR, applicants rely on the species called Compound II. RPRFR describes Compound II at page 28, lines 9-12<sup>8</sup> by its chemical name: 4-acetoxy-2 $\alpha$ -benzoyloxy-5 $\beta$ ,20-epoxy-1 $\beta$ ,10 $\beta$ -dihydroxy-7 $\beta$ ,8 $\beta$ -methylene-9-oxo-19-nor-11-taxen-13 $\alpha$ -yl-(2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenylpropionate.

The working Example in RPRFR at page 26, line 13 to page 33, line 11, teaches one skilled in the art how to make this compound. In Exhibit G, applicants have summarized the exemplified synthesis of Compound II in a reaction diagram that identifies each intermediate produced in the synthesis and where the intermediate is described in the Example of RPRFR.

To constitute a constructive reduction to practice, RPRFR must also provide a statement of utility. At page 33, line 12 to page 38, line 17, RPRFR states that the compounds of formula (I), corresponding to the generic formula of Count 1, possess inhibitory activity with respect to abnormal cell proliferation and possess therapeutic properties making them capable of

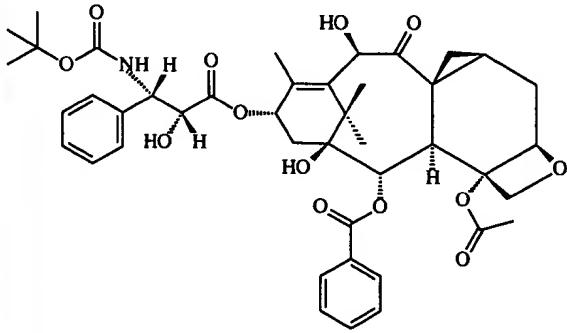
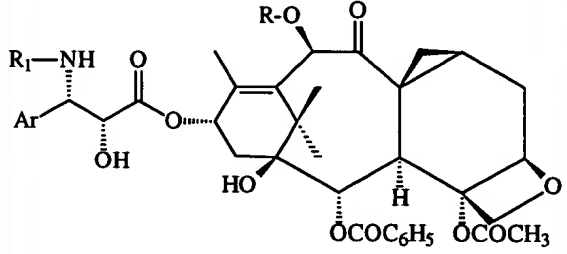
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<sup>8</sup> All page numbers referred to in RPRFR are page numbers of the certified English translation of RPRFR and specifically are the "Sheets Before Correction."

treating patients having pathological conditions associated with abnormal cell proliferation. In other words, the compounds have anti-tumor properties. RPRFR particularly refers to treating colon cancer at page 33, lines 24-26. Beginning at page 34, line 9, and extending to page 38, line 17, moreover, RPRFR teaches those skilled in the art to use the compounds of formula (I) as anti-tumor agents, detailing modes of administration, suitable carriers and excipients, dosage amounts, and the like.

Thus, RPRFR provides a concise written description of a species, Compound II, within the scope of generic Count 1 and enables one skilled in the art to make and use that compound as of December 9, 1992. Accordingly, the RPR effective filing date for Count 1 is December 9, 1992. Table 8 summarizes the RPR constructive reduction to practice of the generic Count:

Table 8

<p>RPRFR species within Genus Count:</p> 	<p>Genus Count:</p>  <p>Ar can be phenyl, R is hydrogen or acetyl, R<sub>1</sub> is benzoyl or R<sub>2</sub>-O-CO-, wherein R<sub>2</sub> is t-butyl</p>
<p><u>Name</u> 4-acetoxy-2<math>\alpha</math>-benzoyloxy-5<math>\beta</math>,20-epoxy-1<math>\beta</math>,10<math>\beta</math>-dihydroxy-7<math>\beta</math>,8<math>\beta</math>-methylene-9-oxo-19-nor-11-taxen-13<math>\alpha</math>-yl(2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenylpropionate (same as Lavelle Declaration Compound II)</p>	<p>Written description support in RPRFR: Page 28, lines 9-12 How to make: Example at pages 26-33, (see, Exhibit G, Preparation of Compound II). How to use: Pages 33-38; anti-tumor compound.</p>

During the interview, the Examiners raised the question of whether the reaction processes involved in the constructive reduction to practice in RPRFR of Compound I would somehow adversely affect the -OAc group shown at the 10-position of the compound. The answer to that question is no.

The teachings of RPRFR themselves, as illustrated in the reaction diagram of Exhibit H to produce Compound I, confirm that the various reactions do not adversely affect the -OAc group. When the teachings of a specification disclose the manner and process of making the invention, they must be accepted as complying with the enablement requirement, unless reason to doubt the objective truth of the teachings exist. In re Marzocchi, 169 U.S.P.Q. 367, 369 (C.C.P.A. 1971).

There is no reason to doubt the objective truth of the enablement taught in RPRFR. In the actual working example in RPRFR where Compound I is made, the corresponding reaction diagram of Exhibit F shows that none of the reactions adversely affected the -OAc group at the 4-position of the compound, even though that -OAc group was present in every reaction. Since the -OAc group in the 4-position was never adversely affected in the working example where Compound II was prepared, there is no reason to doubt the objective teachings of RPRFR that the -OAc in both the 4- and 10-position of the compound is not adversely affected by any of the reaction steps taught for making Compound I of the species count.

Finally, the present RPR specification, although filed after RPRFR, provides objective evidence demonstrating that the teachings of RPRFR truly enabled the preparation of Compound I. In re Armbruster, 185 U.S.P.Q. 152, 155 (C.C.P.A. 1975) provides that post-filing date evidence may be considered as "suitable proofs" in demonstrating objective enablement.

Example 3 of the present RPR specification describes the preparation of Compound I from the last step of the process, indicated as step 5 in the reaction diagram of Exhibit H. Referring

to Example 2, the Examiner will see that the starting material<sup>10</sup> of Example 3 (i.e., the compound of formula IV in Exhibit H) was in fact used in the last step of Example 2, described at page 35, line 25 to page 37, line 4. Instead of reacting the compound of formula IV with benzoyl chloride (page 36, line 4) to form Compound III (as designated in the Lavelle Declaration) of Example 2, the specification teaches, in Example 3, using di-tert-butyl dicarbonate (page 39, line 28) to form Compound I.

Thus, all prior steps 1-4 of Example 2 leading to the "final" starting material apply with equal force to Example 3, which makes Compound I of the species count. Further, all of the prior steps in Example 2 track the teachings in RPRFR as diagrammed in Exhibit H:

Step 1 is described at page 39, lines 15-20;

Step 2 is described at page 38, line 25 to page 39, line 14;

Step 3 is described at page 38, lines 7-24; and

Step 4 is described at page 37, line 20 to page 38, line 6.

Thus, Example 3, taken in combination with Example 2 of the present RPR specification, proves that the teachings in RPRFR truly enabled one skilled in the art to make Compound I. Example 3 removes any remaining shred of doubt about whether the reaction conditions set forth in RPRFR for making Compound I would adversely affect the -OAc group at the 10-position.

Regarding utility, RPRFR, as explained above, discloses at pages 33-38 anti-tumor utility, including the treatment of cancer, and how to use the compounds of formula (I) to achieve that purpose. Accordingly, RPRFR describes the species Compound I and enables the skilled artisan to make and use Compound I.

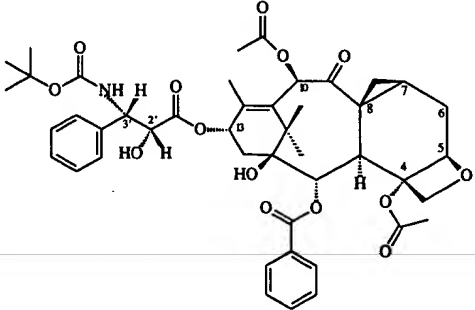
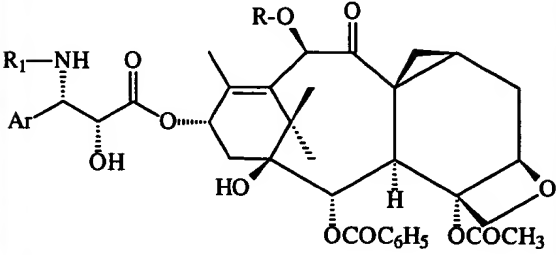
RPRFR is thus a constructive reduction to practice of species Count 2. RPR's effective filing date, for interference purposes, for Count 2 is December 9, 1992.

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<sup>10</sup> 4 $\alpha$ ,10 $\beta$ -diacetoxo-2 $\alpha$ -benzoyloxy-5 $\beta$ ,20-epoxy-1 $\beta$ -hydroxy-7 $\beta$ ,8 $\beta$ -methylene-9-oxo-19-nor-1-taxen-13 $\alpha$ -yl (2R,3S)-3-amino-2-hydroxy-3-phenylpropionate.

Table 9 summarizes the constructive reduction to practice in RPRFR for this count as follows:

Table 9

<p>Compound I species described in RPRFR</p> 	<p>Species Count 2</p> <p>4<math>\alpha</math>-10<math>\beta</math>-diacetoxo-2<math>\alpha</math>-benzoyloxy-5<math>\beta</math>,20-epoxy-1<math>\beta</math>-hydroxy-7<math>\beta</math>,8<math>\beta</math>-methylene-9-oxo-19-nor-11-taxen-13<math>\alpha</math>-yl (2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenylpropionate.</p>
<p><u>Name</u></p> <p>4<math>\alpha</math>-10<math>\beta</math>-diacetoxo-2<math>\alpha</math>-benzoyloxy-5<math>\beta</math>,20-epoxy-1<math>\beta</math>-hydroxy-7<math>\beta</math>,8<math>\beta</math>-methylene-9-oxo-19-nor-11-taxen-13<math>\alpha</math>-yl (2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenylpropionate. (Lavelle Declaration Compound I)</p>	<p>Written description support in RPRFR:</p> <p>Original claims 1 and 3; pp. 39 and 42, considered together;</p>  <p>R: H or acetyl  R<sub>1</sub>: benzoyl or t-butoxycarbonyl  Ar: phenyl  (2 x 2 x 1 = 4 compounds) A disclosure of four compounds is a description of each of the four compounds.  (Compound I of claim 3: R = acetyl  R<sub>1</sub> = t-butoxycarbonyl)</p> <p>How to make:  Page 5 to page 22 (see preparation of Compound I-Exhibit H)</p> <p>How to use:  Pages 33-38: anti-tumor compound</p>

Specifically, the starting material for the reaction, indicated at the top of Exhibit H, falls within the scope of the compound of general formula (IV) at page 4, lines 7-9 of WO 92/09589.<sup>9</sup> This starting material also falls within the scope of Formula (XXV) shown at page 21 of RPRFR.

The starting material in Exhibit H falls within WO formula (IV). This can be confirmed by referring to WO 92/09589. At page 5, line 19 to page 6, line 1, WO states that  $R_2$  of formula (IV) can represent a trialkylsilyl radical in which the alkyl is  $C_{1-4}$ ; at page 4, line 1, WO defines  $R_1'$  as acetyl; and at page 1, lines 5-9, WO describes Ar as phenyl.

The starting material in Exhibit H falls within formula (XXV) of RPRFR. This can be confirmed by referring to page 21 of RPRFR, lines 11-12, where  $G'_2$  is defined as acetyl; at page 21, lines 10-11, where  $G'_1$  is defined as a hydroxy-protecting group; and at page 21, lines 15-21, wherein hydroxy-protecting group  $G'_1$  is further defined as trialkylsilyl, in which the alkyl group contains 1-4 carbon atoms.

As Exhibit H indicates, each reaction step beyond this starting material comes directly from the teachings in RPRFR to eventually yield, at the end of step 5, Compound I. Applicants have also verified that each reaction product illustrated in Exhibit H, "Preparation of Compound I," falls within the scope of the corresponding RPRFR formula indicated in the right margin.

Thus, each step and reaction product shown in Exhibit H, Preparation of Compound I, is expressly taught in RPRFR. Further, each specific reactant/product along the way falls within the express teachings of RPRFR.

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<sup>9</sup> RPRFR references WO 92/09589 at page 22, lines 20-22 for its teachings in preparing this intermediate compound. Applicants have included a certified English language translation of WO 92/09589 as Exhibit I. References in Exhibit H and the text of this Request to WO 92/09589 are to the page numbers in the English translation.

2. RPR effective filing date for species Count 2: 9 December 92

As a constructive reduction to practice of species Count 2, i.e., Compound I of the Lavelle Declaration, applicants refer to original claim 3 at page 42 of RPRFR for written description support. RPRFR claim 3 recites derivatives according to the structural formula of claim 1 (page 39), which corresponds to the generic formula of the Count 1, in which R represents a hydrogen atom or an acetyl radical,  $R_1$  represents a benzoyl or a radical  $R_2$ -O-CO,  $R_2$  represents a t-butyl radical, and Ar represents a phenyl radical.

As such, original claim 3 defines only four compounds, which includes Compound I. A disclosure of four compounds constitutes a description of each of the four compounds.

In In re Petering, 133 U.S.P.Q. 275, 280 (C.C.P.A. 1962), the CCPA found that a generic reference to 20 compounds was the same as if the name of each of the compounds had been written. Clearly, if a generic description of 20 compounds is a description of each of the 20 compounds, a generic description of four compounds is a fortiori a description of each of the four compounds. Accordingly, RPRFR provides a written description of Compound I, the species of Count 2.

As discussed at the interview, there is no working example in RPRFR for Compound I. Nonetheless, one skilled in the art could have routinely and readily made Compound I as of December 9, 1992 following the teachings of RPRFR. Exhibit H provides a detailed reaction diagram for the preparation of Compound I based on these teachings.

**3. RPR effective filing date for intermediate Count 3: 9 December 92**

Original claim 29 of RPRFR (page 53) discloses an intermediate compound of formula VI, corresponding to the formula of proposed Count 3, in which  $G_1$  can represent hydrogen or acetyl. This is a written description of the subject matter of RPR claim 141. Thus, RPRFR provides a written description of the subject matter of intermediate Count 3, since the subject matter of claim 141 is included in Count 3.

Although RPRFR does not specifically exemplify a compound falling within formula VI, it does provide adequate direction to one skilled in art to readily make the intermediates of formula VI and to utilize those intermediates in making an anti-tumor compound falling within the scope of general formula (I), corresponding to the formula of generic Count 1. In fact, Exhibits J and K provide reaction diagrams based on the teachings in RPRFR showing how the skilled artisan could make intermediates of formula VI and then use those intermediates to make the anti-tumor products.<sup>11</sup>

Accordingly, RPRFR provides a constructive reduction to practice of intermediate Count 3, RPR's effective filing date for that count, for interference purposes, is December 9, 1992.

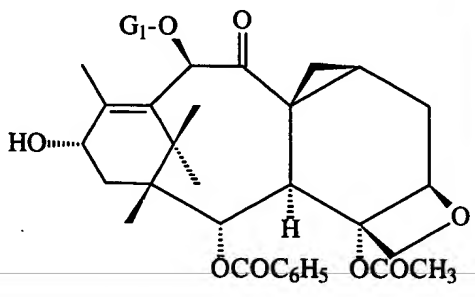
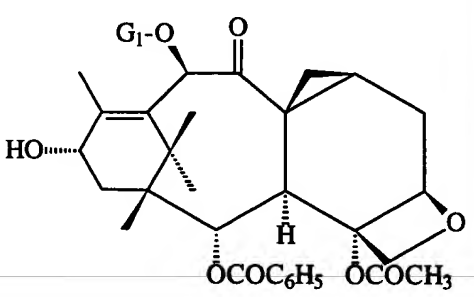
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<sup>11</sup> Page numbers referred to in Exhibit J and K are page numbers of the certified translation of RPRFR, and specifically are the "Sheets Before Correction."



Table 10 summarizes the bases for this conclusion:

Table 10

<p>141. A taxoid of the formula:</p> 	<p>Intermediate Count 3:</p>  <p>G<sub>1</sub> represents hydrogen or acetyl</p>
<p>G<sub>1</sub> represents hydrogen or acetyl</p>	<p>Written Description: Original claim 29</p> <p>How to make and use: See First and Second Method (Exhibits J and K) and pp. 33-38: final products are anti-tumor compounds.</p>

Therefore, applicants have demonstrated a constructive reduction to practice for each of the three counts. Accordingly, on Form PTO-850, applicants should be accorded the benefit of RPRFR for each of the three counts.

**4. BMS' effective filing date for any of  
Counts 1-3: not possibly earlier than 11 March 93**

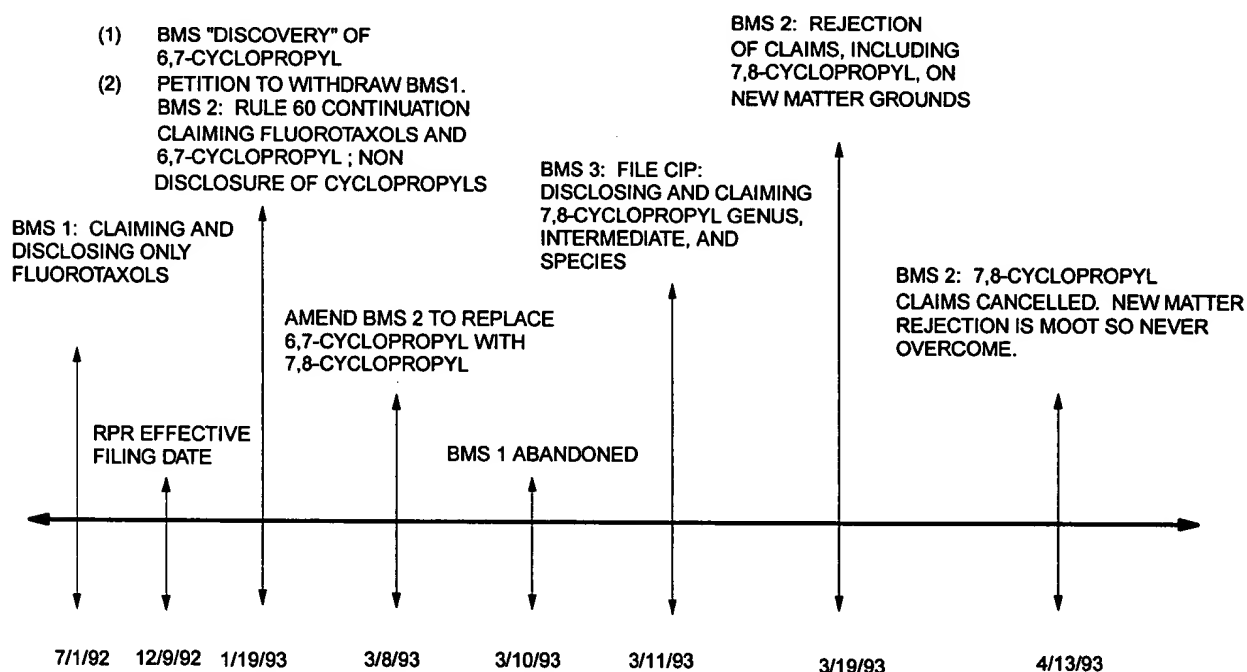
As Timeline 1 above indicates, the BMS patent is a CIP application ("BMS3") of a prior application ("BMS2"), filed on January 19, 1993, which is a Rule 60 continuation of a prior application ("BMS1"), filed on July 1, 1992. The CIP application, as demonstrated at the interview, represents the first possible disclosure of either the 7,8 cyclopropyl final products or the intermediates.

280

As explained in more detail below, since neither BMS1 nor BMS2 supports these 7,8 cyclopropyl compounds, BMS is entitled to an effective filing date not possibly earlier than March 11, 1993. Accordingly, Form PTO-850 should indicate that BMS is not accorded benefit of either BMS1 or BMS2. Consequently, RPRFR has the earlier effective filing date for all three counts and should be designated Senior Party in the interference.

The following Timeline 2 details the relevant BMS activities in the PTO involving each of the BMS applications.

### Timeline 2



Referring to Timeline 2, the BMS1 application, entitled "Fluoro Taxols," disclosed and claimed only fluoro taxol compounds. It contains no description or other express indication concerning cyclopropyl taxol derivatives, let alone a 7,8-cyclopropyl compound. As the Examiners will recall, this statement was verified at the interview by showing the Examiners each page of BMS1. The claims of BMS1 received a first action allowance.

On January 19, 1993, after paying the issue fee on November 9, 1992, BMS filed a petition to withdraw the BMS1 application from issue. The expressed reason for withdrawal was that a "recent investigation" had revealed that what were once believed to be 7-fluorotaxol derivatives were cycloproptaxol derivatives, which BMS drew as 6,7 cyclopropyl compounds. Petition to Withdraw, p. 2. The PTO granted the petition and withdrew the BMS1 application from issue on February 22, 1993.

Simultaneously with the filing of the petition to withdraw, BMS filed the BMS2 application with a specification identical to BMS1 under Rule 60. Accompanying the BMS2 application was a preliminary amendment adding claims 24-26 and 28 directed to cycloproptaxol derivatives drawn as 6,7-cycloproptaxols.

On March 8, 1993, BMS filed a second preliminary amendment in BMS2 replacing the formulae of the claims 24-26 and 28 covering cycloproptaxol derivatives with formulae corresponding to 7,8-cycloproptaxol derivatives. In an Office Action mailed March 19, 1993, the PTO, per Examiner Reamer, rejected the cycloproptaxol claims 24-26 and 28 as lacking written description support and constituting new matter. See page 2-3 of the March 19, 1993 Office Action.

In responding in BMS2 on April 13, 1993, to the Office Action, BMS cancelled the cycloproptaxol claims 24-26 and 28. Amendment, dated April 13, 1993, p. 2. Cancelling these claims mooted the new matter rejection, and the PTO allowed the application containing the remaining fluorotaxol claims. On March 11, 1993, BMS3, a CIP of BMS2, was filed, disclosing and claiming 7,8-cycloproptaxols for the first time.

Thus, the last word from the PTO was that cycloproptaxol claims 24-26 and 28 were not supported by the specification of BMS2 and constituted new matter. Since the specifications of BMS1 and BMS2 are identical, this new matter position also applies to BMS1.

Accordingly, at the earliest, BMS possibly disclosed the 7,8 cyclopropyl intermediates and final products in the CIP application filed March 11, 1993. Consequently, BMS is entitled to an effective filing date for Counts 1-3 no earlier than March 11, 1993, some four months later than the RPR effective date for all counts.<sup>12</sup> Significantly, the Examiners agreed at the interview with this conclusion regarding BMS' effective date and determined that it was not necessary for applicants to continue at the interview with further proof on this issue.

**5. Rule 608 does not apply**

In the previously filed Rule 607 Request, applicants took a position that might be erroneously interpreted to suggest that 37 C.F.R. § 1.608 applies in instituting this interference with the BMS patent. Request for Institution of an Interference Under Rule 607, dated Oct. 18, 1994, pp. 8-9. One of the purposes of this paper is to withdraw the previous Rule 607 Request and make clear that Rule 608<sup>13</sup> does not apply to the institution of this interference.

With respect to Rule 608(a), if the effective date for the application is three months or less after the earlier of the filing date or effective filing date of a patent, Rule 608(a) requires an applicant to file an affidavit alleging that a basis exists upon which the applicant would be entitled to judgment relative to the patentee. Under Rule 608(b), if the effective filing date of the application is more than three months after the earlier of the filing date or effective filing date of the patent, the applicant, in accordance with Rule 608(b), must make a greater evidentiary

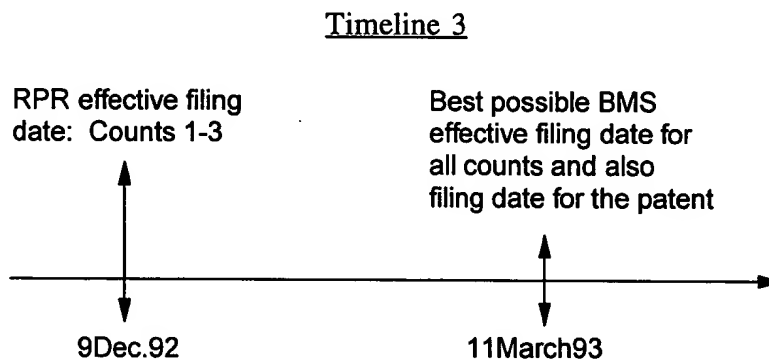
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<sup>12</sup> Applicants are not admitting that the March 11, 1993, CIP constitutes a constructive reduction to practice of Counts 1-3. Rather, what is clear is that BMS is not entitled to an effective filing date earlier than the March 11, 1993, filing date of the CIP application.

<sup>13</sup> As explained earlier, applicants are relying on the form of Rule 608 in effect as of today's filing date, April 20, 1995. The undersigned, however, has studied new Rule 608, which comes into effect on April 21, 1995, and is confident that Rule 608 does not apply, whichever form of the rule is utilized.

showing, which would include one or more affidavits and any relevant patents or publications, demonstrating why the applicant is prima facie entitled to judgment.

As seen, however, from the preceding discussion of the parties' effective filing dates for each of Counts 1-3 and the following Timeline 3, neither paragraph (a) or (b) of Rule 608 would apply to the present situation. This is because the RPR effective filing date for each count, December 9, 1992, is before, not after, the earliest possible effective filing date, March 11, 1993, of the BMS patent (March 11, 1993, is also the "filing date" of the patent for Rule 608 purposes) with respect to all counts:



Accordingly, Rule 608 is not at all relevant, and the interference should be instituted with applicants as senior party.

## V. CONCLUSION AND SUMMARY

As applicants have demonstrated, RPR claims 140-142 presented for interference purposes are allowable and the present application and the BMS patent each claim the same three separately patentable inventions. An interference based on proposed Counts 1-3 is thus appropriate. Furthermore, since applicants have shown an effective date for each of the proposed counts earlier than the earliest possible effective date of the BMS patent, the interference should be declared with applicants designated as senior party as to each count.

Therefore, applicants request the Examiners to issue the following relief:

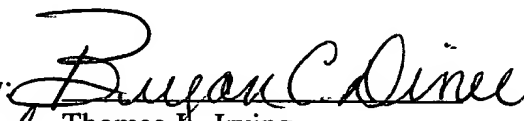
- (1) Prepare and transmit Form PTO-850 recommending to the Administrative Patent Judge the institution of an interference between the RPR application and the BMS patent.
- (2) Propose Count 1 as set forth herein and designate RPR claim 140 and BMS claims 1-6 and 8-9 as corresponding to Count 1.
- (3) Propose Count 2 as set forth herein and designate RPR claim 142 and BMS claims 7-9 as corresponding to Count 2.
- (4) Propose Count 3 as set forth herein and designate RPR claim 141 and BMS claim 10-11 as corresponding to Count 3.
- (5) Designate RPR claims 5, 13, 24, 54, 62, 73, and 103-139 as not corresponding to any count.
- (6) On Form PTO-850, indicate that RPR is entitled to the date benefit of RPRFR for all three counts and should be the Senior party.
- (7) On Form PTO-850, indicate that BMS is not accorded the date benefit of either BMS1 or BMS2 and should be the Junior party.
- (8) Reconsider the election of species required in Group I and indicate that no further restriction in Group I will be required.
- (9) Reconsider the restriction requirement with regard to Groups II-IV and examine the claims of these Groups in a single application.
- (10) Enter the Amendment with respect to new claims 140-142.

It is realized that this matter is extremely complex. If the Examiners have any further questions, they are invited to telephone the undersigned at his U.S. telephone number, (202) 408-4082. Any call will be returned very promptly.

If there are any other fees due in connection with the filing of this Amendment and Request, please charge the fees to our Deposit Account No. 06-0916. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER

By:  Reg # 32,409  
for Thomas L. Irving  
Reg. No. 28,619

Dated: April 20, 1995